

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-10 (Cancelled).

Claim 11. (Currently amended) A method for manufacturing a buffer layer of a light emitting semiconductor device, comprising the steps of:

providing a substrate;

supplying an organic metal gas; and

supplying a nitride gas to react with layers formerly formed by the organic metal gas,

wherein the organic metal gas and the nitride gas are supplied into a MOCVD chamber separately,

wherein the substrate is sapphire,

thereby wherein the buffer layer is composed of at least one material selected from the group consisting of metals and compound semiconductors, and a thickness of the buffer layer is at least several-tens Angstrom or more, and

wherein the compound semiconductors are selected from the group consisting of GaN, AlN, BN, InN, AlGa_{0.5}N, AlIn_{0.5}N, InGa_{0.5}N, AlBN, InBN, InAsN, AlAsN, GaAsN, AlInGa_{0.5}N, AlGaBN, AlInBN, InGaBN, AlInAsN, AlGaAsN, AlInGaBN, AlInGaAsN and AlInGaAsBN.

Claim 12. (Cancelled).

Claims 13-20 (Cancelled)

Claim 21. (Previously added) The method as claimed in claim 11, wherein the metals are selected from the group consisting of Ga, Al, B, As and In.

Claim 22. (Previously added) The method as claimed in claim 11, wherein the metals are alloys selected from the group consisting of Ga, Al, B, As and In.

Claim 23. (Cancelled).

Claim 24. (Previously added) The method as claimed in claim 11, wherein the method is adapted to a CVD system.

Claim 25. (Currently amended) A method for manufacturing a buffer layer of a light emitting semiconductor device, comprising the steps of:

providing a substrate;

supplying an organic metal gas;

supplying a nitride gas to react with layers formerly formed by the organic metal gas, wherein the organic metal gas and the nitride gas are supplied into a MOCVD chamber separately; and

repeating the steps of supplying the organic metal gas and supplying the nitride gas in sequence so as to form the buffer layer composed of at least one selected from the group consisting of the layer and a metallic nitride layer that has a thickness of at least several-tens Angstrom or more,

wherein the substrate is sapphire, and

wherein the compound semiconductors are selected from the group consisting of GaN,

AlN, BN, InN, AlGa_N, AlIn_N, InGa_N, AlBN, InBN, InAs_N, AlAs_N, GaAs_N, AlInGa_N,
AlGaBN, AlInBN, InGaBN, AlInAs_N, AlGaAs_N, AlInGaBN, AlInGaAs_N and AlInGaAsBN.

Claim 26. (Cancelled).

Claim 27. (Previously added) The method as claimed in claim 25, wherein said layer is selected from the group consisting of indium (In) and alloy thereof.

Claim 28. (Previously added) The method as claimed in claim 27, wherein said metallic nitride layer is selected from the group consisting of GaN, AlN, BN, InN, AlGa_N, AlIn_N, InGa_N, AlBN, InBN, InAs_N, AlAs_N, GaAs_N, AlInGa_N, AlGaBN, AlInBN, InGaBN, AlInAs_N, AlGaAs_N, AlInGaBN, AlInGaAs_N and AlInGaAsBN.

Claim 29. (Previously added) The method as claimed in claim 25, wherein said layer is selected from the group consisting of aluminum (Al) and alloy thereof.

Claim 30. (Previously added) The method as claimed in claim 29, wherein said metallic nitride layer is selected from the group consisting of GaN, AlN, BN, InN, AlGa_N, AlIn_N, InGa_N, AlBN, InBN, InAs_N, AlAs_N, GaAs_N, AlInGa_N, AlGaBN, AlInBN, InGaBN, AlInAs_N, AlGaAs_N, AlInGaBN, AlInGaAs_N and AlInGaAsBN.

Claim 31. (Previously added) The method as claimed in claim 25, wherein said layer is selected from the group consisting of boron (B) and alloy thereof.

Claim 32. (Previously added) The method as claimed in claim 31, wherein said metallic nitride layer is selected from the group consisting of GaN, AlN, BN, InN, AlGa_N, AlInN, InGa_N, AlBN, InBN, InAs_N, AlAs_N, GaAs_N, AlInGa_N, AlGaBN, AlInBN, InGaBN, AlInAs_N, AlGaAs_N, AlInGaBN, AlInGaAs_N and AlInGaAsBN.

Claim 33. (Previously added) The method as claimed in claim 25, wherein said layer is selected from the group consisting of gallium (Ga) and alloy thereof.

Claim 34. (Previously added) The method as claimed in claim 33, wherein said metallic nitride layer is selected from the group consisting of GaN, AlN, BN, InN, AlGa_N, AlInN, InGa_N, AlBN, InBN, InAs_N, AlAs_N, GaAs_N, AlInGa_N, AlGaBN, AlInBN, InGaBN, AlInAs_N, AlGaAs_N, AlInGaBN, AlInGaAs_N and AlInGaAsBN.

Claim 35. (Previously added) The method as claimed in claim 25, wherein said layer is selected from the group consisting of arsenic (As) and alloy thereof.

Claim 36. (Previously added) The method as claimed in claim 35, wherein said metallic nitride layer is selected from the group consisting of GaN, AlN, BN, InN, AlGa_N, AlInN, InGa_N, AlBN, InBN, InAs_N, AlAs_N, GaAs_N, AlInGa_N, AlGaBN, AlInBN, InGaBN, AlInAs_N, AlGaAs_N, AlInGaBN, AlInGaAs_N and AlInGaAsBN.

Claim 37. (Previously added) The method as claimed in claim 25, wherein the method is adapted to a CVD system.

Claim 38. (Previously added) A buffer layer of a light emitting semiconductor device, wherein the light emitting semiconductor device includes a substrate, said buffer layer disposed on the substrate, an light emitting semiconductor layer, and electrodes, said buffer layer is manufactured by the method claimed in claim 11.

Claim 39. (Previously added) A buffer layer of a light emitting semiconductor device, wherein the light emitting semiconductor device includes a substrate, said buffer layer disposed on the substrate, an light emitting semiconductor layer, and electrodes, said buffer layer is manufactured by the method claimed in claim 25.

Claim 40. (Currently amended) A method for manufacturing a buffer layer of a light emitting semiconductor device, comprising the steps of:

providing a substrate;

supplying an organic metal gas;

supplying a nitride gas to react with layers formerly formed by the organic metal gas, wherein the organic metal gas and the nitride gas are supplied into a MOCVD chamber separately; and

repeating the steps of supplying the organic metal gas and supplying the nitride gas in sequence so as to form the buffer layer that has a thickness of at least several-tens Angstrom or more,

wherein the substrate is sapphire,

thereby wherein the buffer layer is composed of at least one material selected from the group consisting of metals and compound semiconductors, and

wherein the compound semiconductors are selected from the group consisting of GaN, AlN, BN, InN, AlGaN, AlInN, InGaN, AlBN, InBN, InAsN, AlAsN, GaAsN, AlInGaN,

AlGaBN, AlInBN, InGaBN, AlInAsN, AlGaAsN, AlInGaBN, AlInGaAsN and AlInGaAsBN.

Claim 41. (Cancelled).

Claim 42. (Previously added) The method as claimed in claim 40, wherein the metals are selected from the group consisting of Ga, Al, B, As and In.

Claim 43. (Previously added) The method as claimed in claim 40, wherein the metals are alloys selected from the group consisting of Ga, Al, B, As and In.

Claim 44. (Cancelled).

Claim 45. (Previously added) The method as claimed in claim 40, wherein the method is adapted to a CVD system.